Nakamichi®

DR-10

Discrete Head Cassette Deck

DR-8

Two-Head Cassette Deck

Owner's Manual

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WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING

The Federal Communications Commission does not allow any modifications or changes to the unit EXCEPT as that specified by Nakamichi in this manual. Failure to comply with this government regulation could void your authority to operate the equipment

This digital apparatus does not exceed the CLASS B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Please record the serial number in the space provided below and retain this number. The serial number is located on the rear panel of the unit.

Model Number: DR-10/DR-8

Serial Number : _____

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Important Notice

This is applicable to sales outside the European Community.

We thank you for your purchase of this Nakamichi product and trust that it will provide you with many years of trouble-free performance. Should you be using your Nakamichi product in a country other than the one in which it was originally purchased, we ask you note the following:

1) The appointed Nakamichi distributor for any given country is responsible for warranty servicing only on units distributed by or through it in that country in accordance with its applicable warranty.

2) Should a Nakamichi product require servicing in a country other than the one in which it was originally purchased, the end user may seek to have repairs performed by the nearest Nakamichi distributor, subject to that distributor's local servicing policies, but all costs of repair (parts, labor, transportation) must be born by the owner of the Nakamichi product.

Thank you again for your purchase.

Nakamichi Corporation
Tokyo, Japan

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Safety Instructions

The following safety instructions have been included in compliance with safety standard regulations. Please read them carefully.

1. Read Instructions – All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – Adhere to all warnings on the appliance and in the operating instructions.
4. Follow Instructions – All operating and use instructions should be followed.
5. Water and Moisture – The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
6. Carts and Stands – The appliance should be used only with a cart or stand that is recommended by the manufacturer.
7. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

8. Wall or Ceiling Mounting – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
9. Ventilation – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug or similar surface that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
10. Heat – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliance (including amplifier) which produce heat.
11. Power Sources – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
12. Grounding or Polarization – Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.
13. Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs. convenience receptacles, and the point where they exit from the appliance.
14. Cleaning – The appliance should be cleaned only as recommended away from power lines.
15. Nonuse Periods – The power Cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
16. Object and Liquid Entry – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
17. Damage Requiring Service – The appliance should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damaged; or.
    B. Objects have been fallen. or liquid has been spilled into the appliance: or.
    C. The appliance has been exposed to rain; or,
    D. The appliance does not appear to operate normally or exhibits a marked change in performance; or,
    E. The appliance has been dropped, or the enclosure damaged.
18. Servicing – The user should not attempt to service the appliance beyond that described in the operating instruction. All other servicing should be referred to qualified service personnel.

Caring for the Exterior Panels

Caring for the exterior panels of the unit should be limited to wiping with a soft dry cloth. Avoid using solvents or alcohol-based cleaners.

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Usage Precautions

Cleaning

Clean the unit only by wiping it with a soft cloth. Never use any solvents, cleaning alcohol or chemical cleaners, since these may damage the finish and labelling, and lead to discoloration and deformation.

Packing material

We recommend that you retain the shipping carton and packing material of the unit, since these will be useful for renewed transport.

Voltage selector

If the model you have purchased is a version with voltage selector, be sure to confirm that the selector is set to the correct AC voltage used in your area. Check this before plugging the power cord into the AC outlet. If the selector is not set correctly, change the setting so that it matches your local AC voltage rating.

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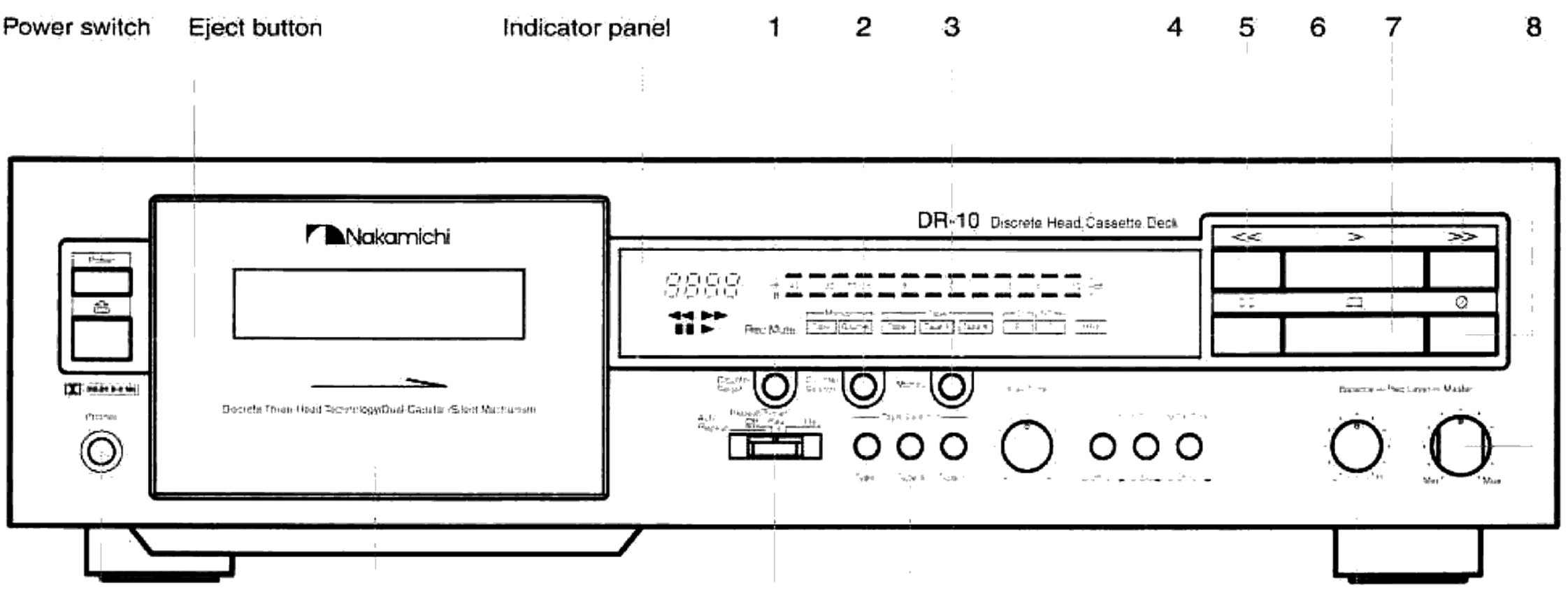
Controls

(DR-10 shown)



1. Counter Reset button

When the Counter Reset button is pressed, the tape counter will be reset to "0000".

2. Counter Search button

In the playback, stop or pause mode, pressing the Counter Search button automatically locates the position of the tape corresponding to a tape counter indication of "0000". When the 0000 point is reached, the mode that was active before the search reentered.

3. Monitor button (DR-10 only)

This unit incorporates an auto monitor function which automatically switches the output signal depending on the operation mode. When the play button is pressed, the "Tape" position is automatically selected. When the deck is set to the Rec-Pause mode by pressing the record button, the output is automatically changed to source. To compare the sound of the signal recorded on the tape with the source sound, or to check the sound quality or the recording level when performing manual adjustment, press the Monitor button to select the "TAPE".

4. Pause button

When the pause button is pressed during playback, the deck enters the pause mode. To resume playback, press the play button.

5. Rewind button/Fast Forward button

The DR-10 is equipped with a Program Check function which allows the checking of the tape's contents. When the rewind (or fast forward) button is pressed twice, the deck enters the rewind (or fast-forward) mode for five seconds then enters the playback mode for five seconds; this process continues until the play or stop button is pressed.

6. Play button

7. Stop button

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8. Record button

When the record button is pressed, the deck enters the Rec-Pause mode. To leave a silent portion during recording, hold the record button depressed. The silent recording portion will be left as long as the record button is pressed. Releasing the record button resumes audio recording.

9. Repeat/Timer selector

Set the Repeat/Timer selector to Auto Repeat, the tape is automatically rewound, and playback starts again when the tape reaches the beginning.

- For timer playback, set the switch to the Play position and set the playback-start time with the (commercially available) audio timer.
- For timer recording, set the switch to the Rec position and set the recording-start time with the (commercially available) audio timer.
- When timer playback or recording is not required (for normal playback/recording), set the switch to the Off position.

10. Tape Selector buttons

Select the tape type according to the tape used. Press the Type I button for normal tapes, the Type II button for high bias (or chrome) tapes, and the Type IV button for metal tapes.

11. Bias Tune control

Bias requirements differ for various tape formulations. To obtain the best sound quality, it is advisable to always adjust bias before recording with this control. (See Recording)

12. Dolby NR On/Off switch

13. Dolby NR B/C switch

The Dolby B-Type NR is designed to reduce tape hiss and increase dynamic range in the upper frequency range. The effect of the Dolby C-Type NR takes effect at lower frequencies and dynamic range improvement is greater. Dolby C-Type NR will give best results for recording program material which has

- marked level differences (wide dynamic range)
- low signal level in the mid and upper frequencies
- a large amount of mid and upper frequency energy.

Set to the B position when playing back a tape recorded with Dolby B NR, and set to the C position when playing back a tape recorded with Dolby C NR. Dolby noise reduction will not be effective if it is set to the wrong position.

14. MPX Filter switch

Set this switch to On when recording an FM stereo broadcast with Dolby NR activated. With the MPX Filter set to On, the 19-kHz pilot in the FM stereo signal that could cause the Dolby NR to malfunction will be filtered out.

15. Rec Level Master control

Use this control to adjust the recording level of the L and R channels simultaneously. Adjust the balance between the L and R channels using the Rec Level Balance control. (See Recording)

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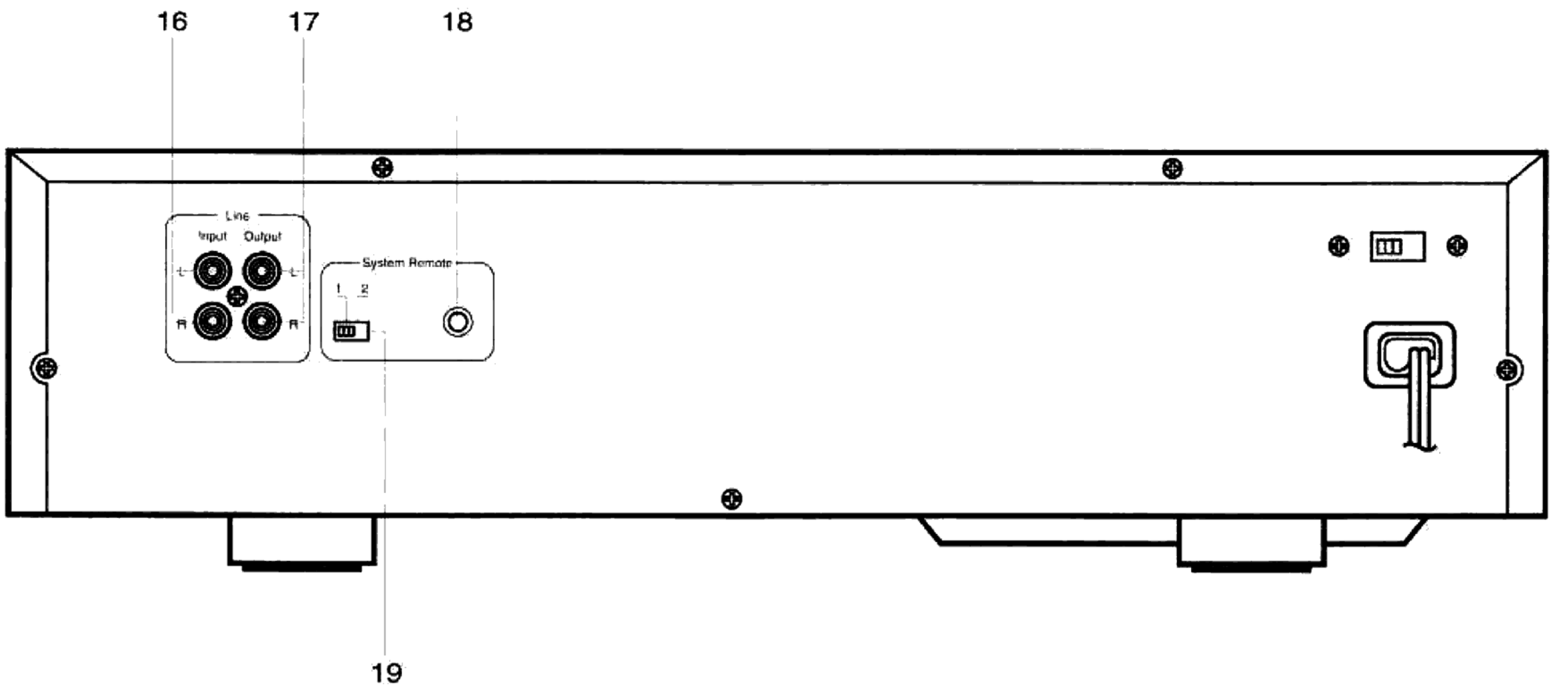
Controls



16. Line Input terminals

Using the pin-jack cord provided, connect the Rec Out L (white) and R (red) jacks of the control amplifier, pre-main amplifier or receiver to these terminals.

17. Line Output terminals

Using the pin-jack cord provided, connect the Tape Playback L (white) and R (red) jacks of the control amplifier, pre-main amplifier or receiver to these terminals.

18. System Remote input terminal

When the System Remote input terminal is connected to the System Remote Output "Tape 1" or "Tape 2" terminal of a Nakamichi component having system remote control functions, this unit can be controlled remotely from that component.

19. System Remote 1/2 (Tape 1/2 Setup) switch

Set this switch to the Tape 1 position when the System Remote cable is connected to the System Remote Output "Tape 1" terminal of a Nakamichi component having control center functions, and set it to the Tape 2 position when connected to the System Remote Output "Tape 2" terminal. Be sure to turn the power of this unit Off before changing the setting of the System Remote 1/2 switch.

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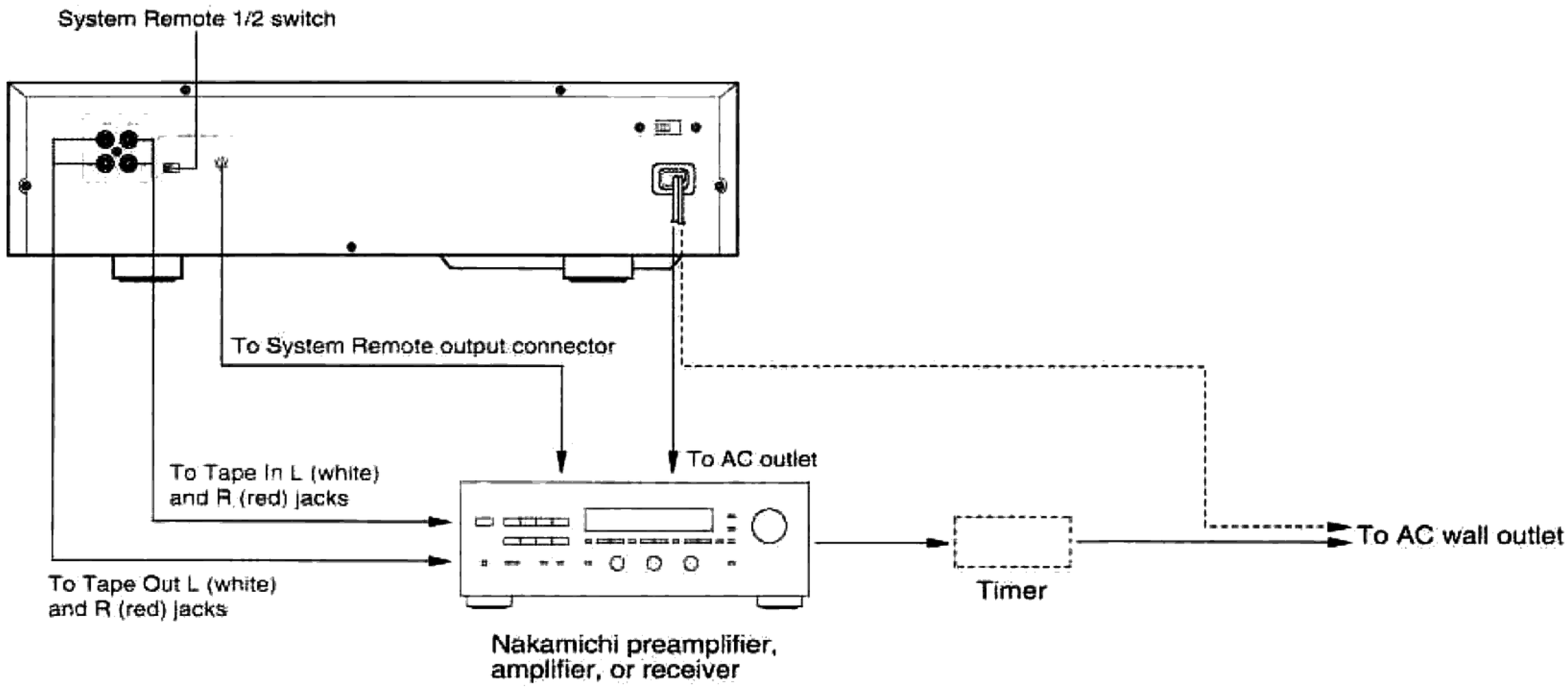
Connection



Before making any connections, be sure to turn off the power of all components.

CAUTION

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

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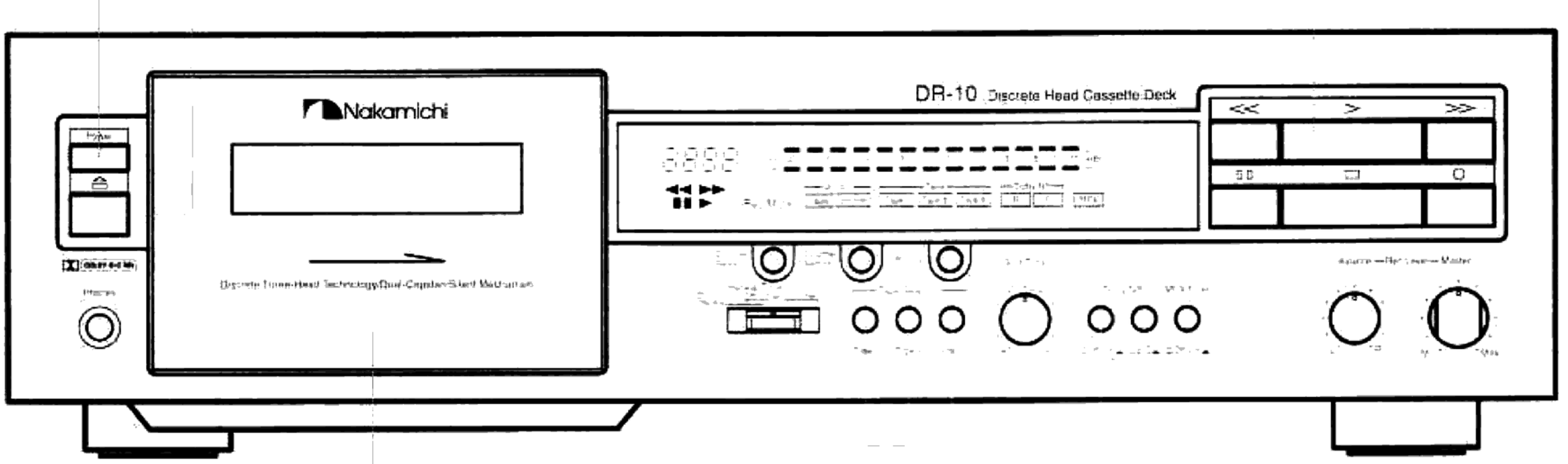
Playback

(DR-10 shown)



1. **Press the Power switch.**
2. **Press the Eject button.**
3. **Insert the cassette.**
4. **Close the cassette holder.**
5. **Select the tape type with the Tape Selector buttons.**
6. **Set the Dolby NR On/Off switch.**
7. **Set the Dolby NR B/C switch.**
8. **Press the Play button.**

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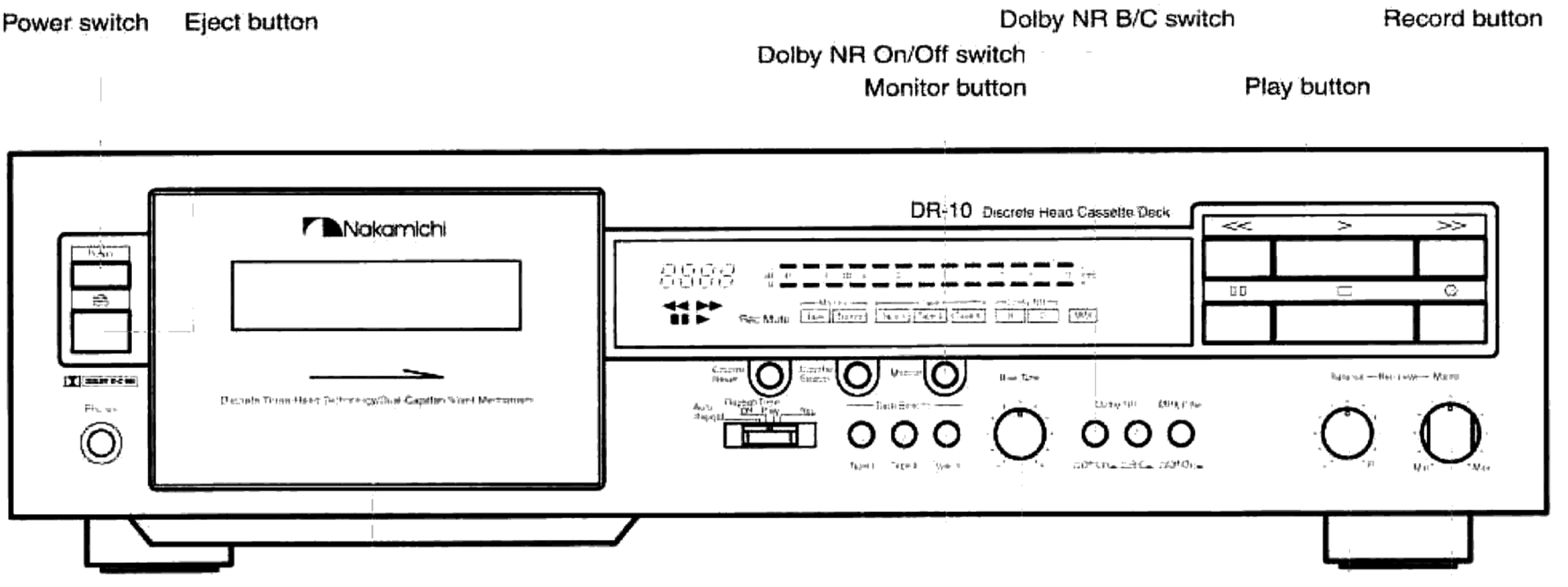
Recording

(DR-10 shown)



1. **Press the Power switch.**
2. **Press the Eject button.**
3. **Insert the cassette.**
4. **Close the cassette holder.**
5. **Select the tape type with the Tape Selector buttons.**
6. **Set the Dolby NR On/Off switch.**
7. **Set the Dolby NR B/C switch.**

Record Level Adjustment

8. **Set the Bias Tune control to the center position.**
9. **Press the Record button.**
10. **Play back the source to be recorded.**
11. **Adjust the record level.**

    For normal and Type II tapes, adjust so that the +5 dB indicator lights briefly when the loudest sound is input. For metal tapes, adjust so that the +8 dB indicator lights briefly when the loudest sound is input.
12. **Adjust the record level balance.**
13. **Press the Play button.**
14. **Listen to the sound after it has been recorded on the tape, and compare it with the source sound.**

    For DR-10, alternate between Source and Tape sound by pressing the Monitor button during recording.
15. **Adjust the bias by rotating the Bias Tune control.**

    Turn the Bias Tune control counterclockwise to increase the high frequency content of the tape. Turn the control clockwise to decrease the high frequency content of the tape. Adjust until the Tape sound is the same as the Source sound.

16. **Press the Record button.**
17. **Play back the source to be recorded.**
18. **Press the Play button.**

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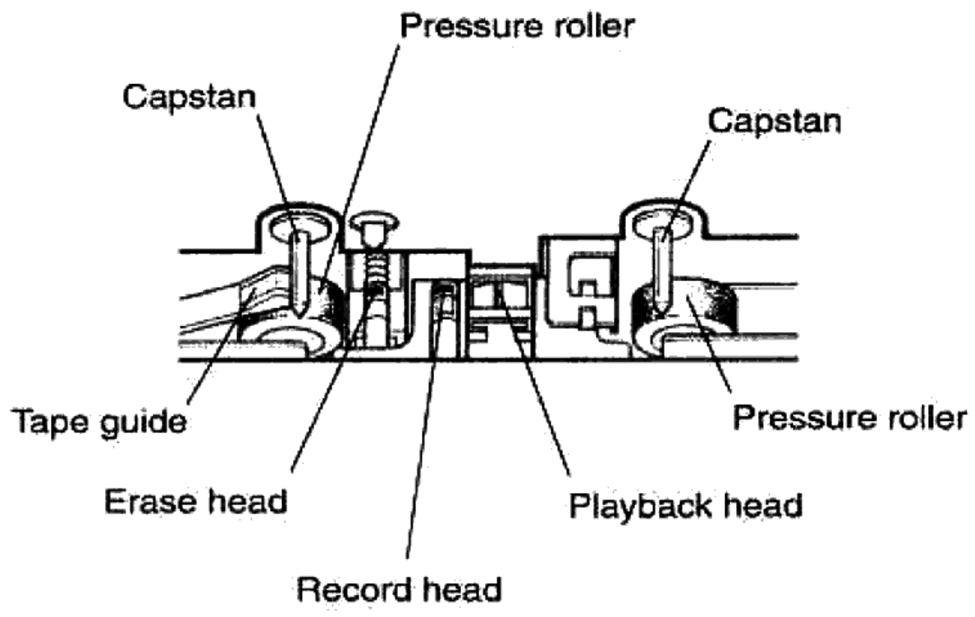
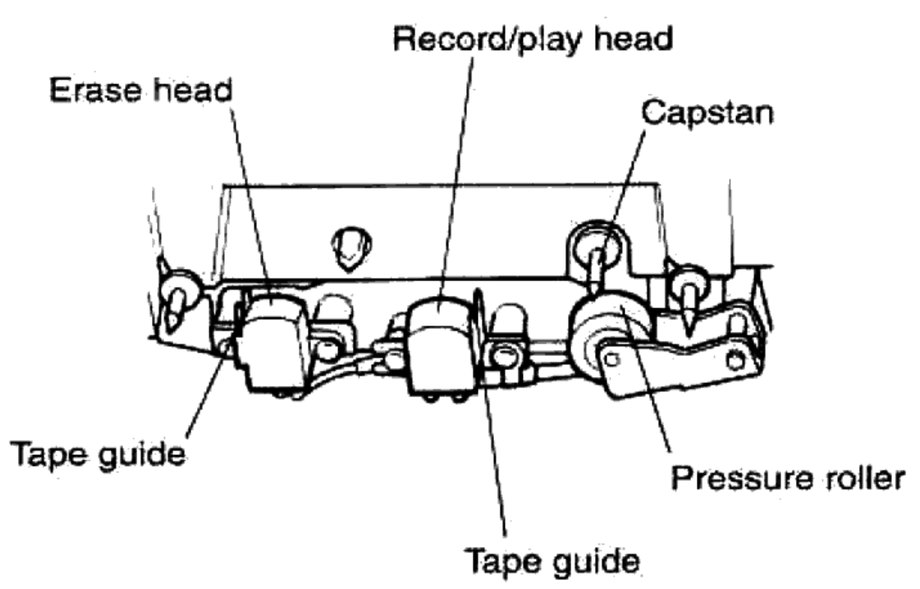
Maintenance

DR-10



DR-8



Cleaning procedure

Cleaning should be performed before each recording session and once every 10 hours of playback time. If the heads, capstan or pressure roller are dirty, dropouts may occur and high-frequency response and wow-and-flutter characteristics may be severely degraded. When cleaning, with the cassette holder open, remove the cassette holder door by lifting it up then pulling it towards you. After this, clean the heads, capstan and pinch rollers using cotton swabs dipped in cleaning fluid.

- We recommended a zero-residue fluorocarbon-based fluid which can be purchased at your local audio dealer.
- Do not run the tape immediately after cleaning. Wait for about 5 minutes so that cleaning fluid completely evaporates before running the tape.

Demagnetizing

About once every 50 hours of use, the heads and capstan should be demagnetized with the properly designed wand-type demagnetizer. Otherwise, residual magnetism can induce noise and degrade high-frequency response.

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Troubleshooting

Some apparent malfunctions may be remedied by simple checks as described below. If the problem persists, please contact your dealer or an authorized Nakamichi service center.

Power is not turned on.

- Check that the AC power plug is connected firmly to an AC outlet.

Tape does not run

- Close the cassette holder firmly.

Record button is pushed, but recording is not possible.

- Check whether record-prevention tab of the cassette side is removed.

Record mode is activated, but no sound is recorded.

- Increase record level.
- Check connection.

No playback sound.

- Check connection.

Tape sounds dull.

- Check Tape Selector setting.
- Clean heads.
- Set the Dolby NR system to Off when playing back a tape recorded without Dolby NR.

Hiss noise is heard.

- Demagnetize heads.
- Set Dolby NR to On for playback of tapes recorded with Dolby NR.

Old recordings cannot be fully erased.

- Clean erase head and pressure roller.

Sound is unstable or dropouts occur.

- Clean pressure roller and capstan.

Sound is distorted during recording/playback.

- Reduce record level.
- Check Tape Selector setting.

Hum is heard.

- Increase distance between cassette deck and appliances such as TV sets or air conditioners.
- Check connections.

Recording or playback starts when unit is turned on.

- Set the Repeat/Timer selector to Off.

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Specifications

	DR-10	DR-8
Track Configuration	4 tracks / 2-channel stereo	4 tracks / 2-channel stereo
Heads	3 (erase head x 1, record head x 1, playback head x 1)	2 (erase head x 1, record/playback head x 1)
Motors		
Tape Transport	DC servo motor (capstan drive) x 1	DC servo motor (capstan drive) x 1
	DC motor (reel drive) x 1	DC motor (reel drive) x 1
Mechanism	DC motor (cam drive) x 1	DC motor (cam drive) x 1
Wow-and-Flutter	Less than ±0.06 % WTD Peak	Less than ±0.11 % WTD Peak
	Less than 0.035 % WTD RMS	Less than 0.06 % WTD RMS
Tape Speed	1-7/8 ips. (4.8 cm/sec.) ±0.5 %	1-7/8 ips. (4.8 cm/sec.) ±0.5 %
Fast-Wind Time	Approx. 95 seconds (with C-60 cassette)	Approx. 80 seconds (with C-60 cassette)
Frequency Response	20-21,000 Hz ±3 dB	20-20,000 Hz ±3 dB
	(recording level -20 dB, Type I/II/IV)	(recording level -20 dB, Type I/II/IV)
Signal-to-Noise Ratio (70 µs,Type V)		
Dolby C Type NR On	Better than 72 dB	Better than 70 dB
	(400 Hz, 3 % THD, IHF A-WTD RMS)	(400 Hz, 3 % THD, IHF A-WTD RMS)
Dolby B-type NR On	Better than 66 dB	Better than 64 dB
	(400 Hz, 3 % THD, A-WTD RMS)	(400 Hz, 3 % IHF THD, A-WTD RMS)
Total Harmonic Distortion	Less than 0.8 % (400 Hz, 0 dB,Type IV)	Less than 1.0 % (400 Hz, 0 dB,Type I/II/IV)
	Less than 1.0 % (400 Hz, 0 dB, Type I/II)	
Channel separation	Better than 37 dB (1 kHz, 0 dB)	Better than 36 dB (1 kHz, 0 dB)
Crosstalk	Better than 60 dB (1 kHz, 0 dB)	Better than 60 dB (1 kHz, 0 dB)
Erasure	Better than 60 dB (100 Hz, ±10 dB)	Better than 60 dB (100 Hz, +10 dB)
Bias Frequency	105 kHz	105 kHz
Input		
Line	50 mV/40 kohms	50 mV/40 kohms
Output		
Line	0.5 V/2.2 kohms (400 Hz, 0 dB)	0.5 V 2.2 kohms (400 Hz, 0 dB)
Headphones	5.0 mW/8 ohms (400 Hz, 0 dB)	2.2 mW 8 ohms (400 Hz, 0 dB)
Power Source	120, 230, 240 V or	120, 230, 240 V or
	110-127/220-240 V AC, 50/60 Hz	110-127 220-240 V AC, 50 60 Hz
Power Consumption	26 W max.	20 W max.
Dimensions*	430 (W) x 100 (H) x 320 (D) mm	430 (W) x 100 (H) x 320 (D) mm
	16-15/16 (W) x 3-15/16 (H) x 12-5/8 (D) inches	16-15/16 (W) x 3-15/16 (H) x 12-5/8 (D) inches
Approximate Weight	5.4 kg/11 lbs. 14 oz.	5.4 kg 11 lbs. 14 oz.

* Dimensions do not include protruding parts. Height is the panel height.

Specifications and design are subject to change for further improvement without notice.

Manufactured under license from Dolby Laboratories.

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